

TABLE 10-2

Comparison of annual costs of various wire sizes in the selection of an electrical conductor

(Investment in wire at \$1.75/lb; current of 50 amperes for 4,200 hrs/yr; all calculations based on 1,000 ft of copper wire)

A. Size of wire (AWG)	00	0	1	2	3
B. Weight of wire in lb	403	319	253	201	159
C. Investment in wire	\$705.25	\$558.25	\$442.75	\$351.75	\$278.25
D. Resistance in ohms	0.0795	0.100	0.126	0.159	0.201
E. Power loss in kw	0.1987	0.250	0.315	0.398	0.503
F. Annual energy loss in kw-hr	835	1,050	1,323	1,670	2,111
G. Investment charges at 16.3%	\$114.96	\$90.99	\$72.17	\$57.34	\$45.35
H. Cost of lost energy at 5.5¢ kw-hr	<u>45.93</u>	<u>57.75</u>	<u>72.77</u>	<u>91.85</u>	<u>116.11</u>
I. Total annual cost assumed to be variable with wire size	\$160.89	\$148.74	\$144.94	\$149.19	\$161.46